

Introduction

Propofol is a cornerstone in anesthesia practice for its rapid onset and short duration of action; however, its potential for misuse has prompted regulatory measures in many jurisdictions to control its utilization.^[1] Its new designation as a controlled substance imposes tighter restrictions on its use on patients.

This research aims to investigate the impact of propofol's reclassification on its usage within medical settings. By comparing data from before and after its regulatory status change, any associated shifts in healthcare utilization can be shown.

Understanding how the control of propofol has influenced its usage can provide valuable insights into the effectiveness of regulatory measures in mitigating risks associated with its misuse while ensuring its continued availability for safe medical use. Furthermore, insights gained from this analysis may inform future regulatory strategies for other high-risk medications, contributing to the ongoing efforts to balance patient access to essential medications with public health and safety concerns.

Objectives

- This study aimed to:
- Assess the change in propofol utilization following implementation of a control substance status policy
 - Analyze the impact of the policy on prescribing practices, dispensing procedure, and overall accessibility of propofol within the hospital
 - Identify potential strategies for optimizing propofol usage while adhering to regulatory requirements and patient safety standards.

Methods

This retrospective observational study analyzed all electronic medical records (EMR), pharmacy records, and administrative data for patients receiving propofol from 11/1/2022 to 3/31/2024 to compare usage before and after the implementation of the controlled substance status policy on 5/20/2023. Only the overlapping period of November to March was included to control for potential seasonal variations in surgical procedures and clinical practices. Month to month comparisons were made from before and after policy implementation. Our study included patients in which propofol was ordered for and administered to patients. Only propofol 200 mg vials were used in the study. Patients who were on propofol infusions for sedation (1000 mg and 500 mg propofol vials) were excluded. Propofol utilization was analyzed by comparing total number of cases requiring propofol and average dose of propofol administered per case before and after policy implementation, based on the Medication Administration Record (MAR).

Ethical considerations were addressed by anonymizing patient data and adhering to institutional guidelines for data access and usage. This study design allowed for a comprehensive evaluation of the impact of regulatory changes on propofol utilization in clinical settings, providing insights into practice patterns with controlled substance regulations.

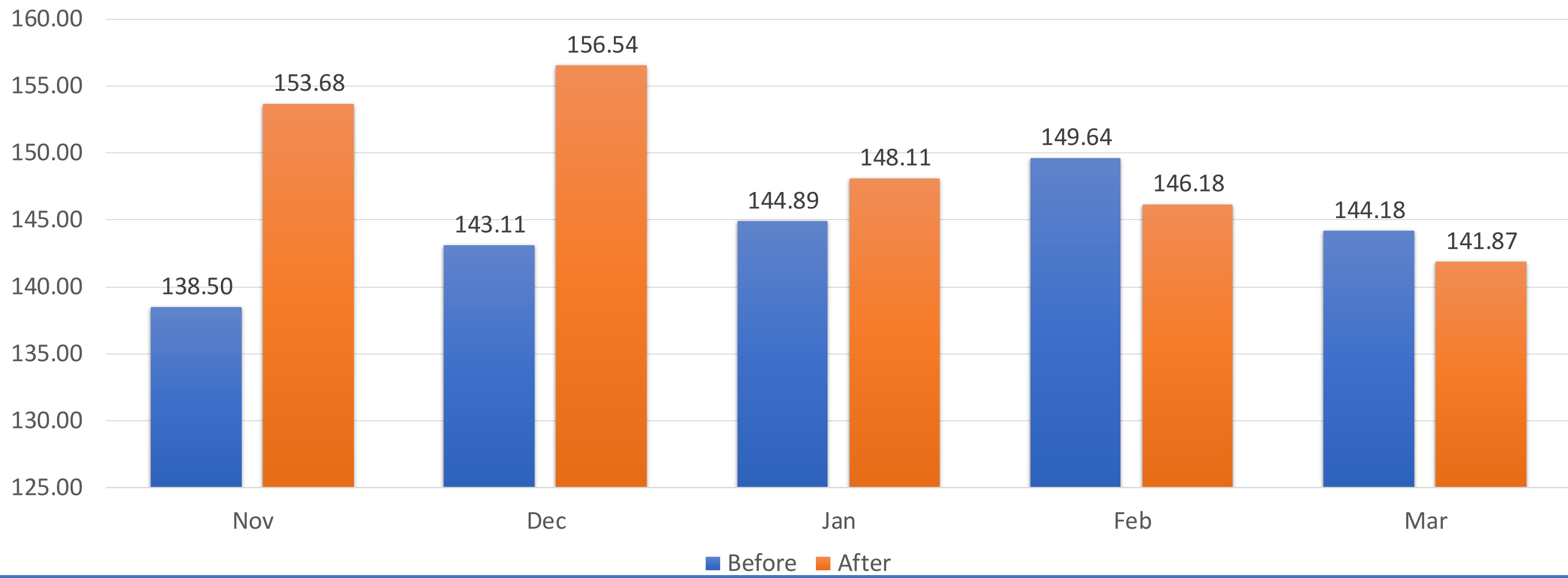
Table 1: Propofol Usage Pre vs. Post Control Classification

Period	Year	Month	Number of Patient Cases	Average of Total MAR Dose	Average of Percentage Used
Before	2022	Nov	1017	138.50	69.2%
		Dec	1028	143.11	71.6%
	2023	Jan	1005	144.89	72.4%
		Feb	1009	149.64	74.8%
		Mar	1164	144.18	72.1%
Before Total			5223	144.06	72.0%
After	2023	Nov	1202	153.68	76.8%
		Dec	1074	156.54	78.3%
	2024	Jan	1168	148.11	74.1%
		Feb	1192	146.18	73.1%
		Mar	1264	141.87	70.9%
After Total			5900	149.05	74.5%
Grand Total			11,123.00	146.71	73.4%

Results

Following the implementation of the controlled substance wasting policy, the analysis demonstrates an increase in the total number of cases using propofol following the implementation of the controlled substance wasting policy (n=5900) compared to before (n=5223). In analyzing the MAR, the average dosage of propofol administered for each case, a significant difference was found: 144.05mg of propofol being administered before the policy compared to 149.05mg of propofol after (p=0.0094).

Chart 1: Total MAR Dose by Month



Discussion

Our analysis of the MAR data provides insights into the usage of propofol before and after its regulation as a controlled substance. Surprisingly, we noted a slight increase in the average MAR dose of propofol post-regulation: from 144.06 mg to 149.05 mg, which was statistically significant (p=0.0094). This unexpected increase in propofol dosage post-regulation suggests a complex response, possibly including heightened awareness of regulatory compliance leading to more judicious documentation practices, or changes in clinical protocols favoring propofol administration. However, our study does not explore how this regulatory shift has affected patient care or emergency drug use. The analysis is constrained by a limited five-month data collection period, spanning pre- and post-regulation phases.

Further investigation is necessary to fully understand the underlying reasons behind this shift and its implications. Ultimately, regulatory measures should balance preventing misuse and diversion while ensuring propofol remains accessible for anesthesia providers in emergency scenarios.^[2]

References

- [1] Burnett, G.W., Taree, A., Martin, L. et al. Propofol misuse in medical professions: a scoping review. Can J Anesth/J Can Anesth 70, 395–405 (2023). <https://doi.org/10.1007/s12630-022-02382-2>
- [2] Stocks, G. (2011). Abuse of Propofol by Anesthesia Providers: The Case for Re-Classification as a Controlled Substance. Journal of Addictions Nursing, 22(1–2), 57–62. <https://doi.org/10.3109/10884602.2010.545091>